



RNA extraction from *Streptomyces* (Actinobacteria) Lab. Microbial Metabolism – Shanghai Jiao Tong University

CONTEXT

Validamycin is a non-systemic antibiotic with fungicide action. It is most effective against damping-off diseases and is used for protecting seedling and clone cuttings.

Our lab is focused on Functional Analysis of the Validamycin Biosynthetic Gene Cluster and Engineered Production of Validoxylamine-A.

This study compares the efficiency of total RNA isolation in using the Precellys®24 vs. Enzymatic lysis.

PROTOCOLS

Precellys®24 sample preparation is compared to traditional enzymatic lysis methods

1. Precellys®24
Parameters: 6500rpm, 2 x 23 sec., 10 sec. break
RNA extraction with Trizol method

2. Enzymatic lysis
RNA extraction with Qiagen RNeasy Mini Kit

Gel electrophoresis analysis and band detection by ethidium bromide staining and UV illumination

MATERIAL

- Precellys®24
- Precellys® kit VK01
- Sample : *Streptomyces Streptomycin* (20mg of mycelium)
- Qiagen RNeasy Mini Kit
- Buffer : Trizol or lysozyme (3mg/mL)

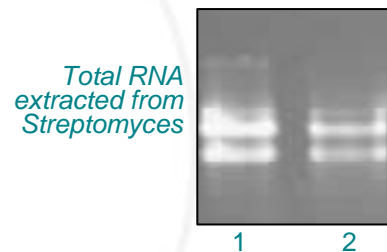


Mycelium of *Streptomyces*



RESULTS

Total RNA extracted is visualized by ethidium bromide staining and UV illumination.



Lane 1 : total RNA extracted with Precellys®24 homogenization
Lane 2 : total extracted RNA with enzymatic lysis

RNA quantity was found to be 2.5 times **higher** for Precellys®24 samples when compared to Enzymatic lysis.

CONCLUSION

A higher RNA quantity was obtained by using Precellys®24 when compared to Enzymatic lysis.

In addition to time saving, easy handling and reproducibility of the results, the Precellys®24 increases the experiment output.